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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/059,682	01/29/2002	Mario E. Bran	VERTE.076A	5570
34132	7590	10/14/2004	EXAMINER	
COZEN O'CONNOR, P.C. 1900 MARKET STREET PHILADELPHIA, PA 19103-3508			MCALEAVEY, ANDREW JAMES	
			ART UNIT	PAPER NUMBER
			1746	

DATE MAILED: 10/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/059,682

Applicant(s)

BRAN, MARIO E.

Examiner

Andrew McAleavey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 21-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. The Response to Restriction Requirement filed September 23, 2004 has been entered and considered, and Applicant's election of Group I, claims 1-20, with traverse is noted.

Applicant's arguments in traversal are not found to be persuasive. In traversing the restriction requirement, Applicant makes two main arguments: (1) that the preambles of the method and apparatus claims have been construed differently (and improperly) in making the restriction; and (2) that it would not be a burden to search both groups of claims. The Examiner will answer each of these in turn.

At the outset, the Examiner notes that Applicant has explicitly agreed with the Examiner's reasons for holding that the claims of the two groups are distinct (response at page 2, second full paragraph) and has also admitted on the record that the apparatus claims are not limited to cleaning apparatus. Both of these admissions have been noted, and Applicant will be held to them in future prosecution.

Applicant begins the first ground of traversal with a review of MPEP Chapter 800. The essence of Applicant's argument, reached after three paragraphs of MPEP citations, is that in making the restriction, the Examiner has construed the preamble recitation in the apparatus claims of an "assembly for cleaning" differently than the preamble recitation in the method claims of "a method of cleaning a substrate." The Applicant asserts that the Examiner's claim interpretation is improper. The Examiner disagrees.

First, there is no litmus test defining when a preamble limits the scope of a claim; the decision must be made on a case-by-case (and claim-by-claim) basis. See *Catalina Mktg. Int'l v. Coolsavings.com, Inc.* 289 F.3d 801, 808, 62 USPQ2d 1781, 1785 (Fed. Cir. 2002). If, after consideration, the preamble of a claim is to be given weight, other issues arise. For example, with respect to the “for cleaning” phrase, there is a fundamental difference in how such a phrase is interpreted and weighed in construing apparatus versus method claims. That is because a phrase like “for cleaning” in an apparatus claim is considered to be a recitation of an intended use, and by well-established precedent, a recitation directed to the manner in which a claimed apparatus is intended to be used does not distinguish it from the prior art if the prior art has the capability to so perform. See, for example, *Ex parte Masham*, 2 USPQ2d 1647 (BPAI 1987) and MPEP § 2114. However, in a method claim, that same phrase is typically given more weight. Thus, there are several legitimate reasons why the preambles of the apparatus claims might be construed and weighed differently than those of the method claims, given the totality of the circumstances.

Although the Examiner offers the foregoing for Applicant's benefit and to clarify the record, the Examiner notes that Applicant, by agreeing with the reasons for finding distinctness in the two groups of claims, has effectively endorsed the Examiner's claim construction, at least with respect to the claim preambles. Therefore, in the Examiner's view, Applicant's admission has rendered Applicant's own arguments largely moot.

As to the second of the two arguments, that there would be no burden to search all of the claims, the Examiner disagrees. Searches for method claims in class 134

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typically involve a broader and different field of search than do searches for apparatus claims, and the two types of searches do not necessarily coincide or even overlap to any significant extent.

Therefore, for at least the foregoing reasons, the restriction requirement is maintained and made **FINAL**. Claims 21-24 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. As noted above, Applicant timely traversed the restriction (election) requirement in the reply filed on September 23, 2004.

Information Disclosure Statement

2. The information disclosure statement filed May 28, 2003 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information (specifically EP 0 044 800) referred to therein has not been considered.

Specification

3. The disclosure is objected to because of the following informalities:

In the "Brief Description of the Drawings" section, Figure 1 is identified as depicting a prior art apparatus. However, each of the subsequent figures through Figure 7 are described as having features "of Figure 1." Given the manner in which the "Brief Description" section is drafted, it is difficult to understand which figures represent

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Applicant's invention and which are part of the prior art. (The Examiner notes that Figures 1-4 bear a "prior art" legend.)

Appropriate correction is required.

Drawings

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "141" has been used to designate both a screen and an electrical contact.
5. Figure 5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA.

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1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1 and 20 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 9 of U.S. Patent No. 6,679,272 to Bran et al. (hereinafter "the '272 patent"). Although the conflicting claims are not identical, they are not patentably distinct from each other.

Claim 9 of the '272 patent recites that the rod is "configured to attenuate the energy transmitted through the rod to a portion of the substrate positioned directly beneath the said rod," whereas claim 1 of the present application recites a "transducer coupled to a transmitter in a manner to attenuate the energy transmitted to a lowermost portion of the transmitter." It is the Examiner's position that a rod "configured to attenuate" and a "transducer coupled to a transmitter in a manner to attenuate" are obvious variants of one another because the configuration of the rod element recited in claim 9 can reasonably be construed to include the manner in which the rod is coupled to other elements.

Claim 20 of the present application recites "the transducer being coupled to the transmitter in a manner to reduce a ratio of the normal-incident waves to the shallow-angle," which is different from the language of claim 9 of the '272 patent. However, one of ordinary skill in the art would realize that reducing the ratio of normal-incident to

shallow-angle waves on the substrate does “attenuate the energy transmitted through the rod to a portion of the substrate positioned directly beneath the said rod,” as recited in claim 9 of the ‘272 patent.

Accordingly, claims 1 and 20 are rejected for obviousness-type double patenting over claim 1 of the ‘272 patent.

Claim Rejections - 35 USC § 102

8. Claims 1-6, 14, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Beck et al., U.S. Patent Application Publication No. 2002/0153806 A1 (hereinafter “Beck”).

Beck discloses a megasonic transducer with a transducer (crystal 34; Figure 3) and a transmitter (14; Figure 3). The transmitter is adapted to be positioned closely above a substrate, as shown in Figures 6 and 7. In between the transmitter and transducer are several metal layers (72, 74, etc.; Figure 3) that couple the transmitter to the transducer.

Beck does not explicitly disclose that the transmitter is coupled to the transducer in a manner to “attenuate the energy transmitted to a lowermost portion of the transmitter...while portions adjacent to the lowermost portion are not so attenuated” (claim 1) or to “attenuate the energy transmitted to a portion of the transmitter” (claim 14) or to “reduce a ratio of normal-incident waves to the shallow-angle waves” (claim 20). However, given the configuration and arrangement of the Beck device, the Examiner’s position is that, absent evidence to the contrary, the metal layers between

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the crystal and the resonator inherently attenuate the energy transmitted to the lowermost portion of the resonator and inherently change the ratio recited in claim 20 because any interface at which transmissive properties change inherently attenuates energy being transmitted through that interface. Moreover, it is the Examiner's position that the effects of that attenuation are different at the lowermost portion of the device than at other portions because of differences in size and shape.

This rejection goes largely to the breadth and language used in these claims. Specifically, the Examiner notes that the language used in an attempt to distinguish over the prior art is largely functional in nature. Although this functional language has been considered, Applicant is reminded that claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device is, not what a device does." *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). The Examiner has found the recited structures in the Beck reference and thus, absent evidence to the contrary, has a reasonable basis to conclude that the functions recited in the claims can be performed by the device of Beck.

Accordingly, claims 1-6, 14, and 20 are anticipated by Beck.

Claim Rejections – 35 USC § 103

9. Claims 1-20 rejected under 35 U.S.C. 103(a) as being unpatentable over the '272 patent.

The '272 patent discloses a transmitter (rod 104; Figures 5 and 6) and a transducer (140; Figure 3). A heat transfer element (134) is also provided. In addition, there are several coupling elements, including a screen (141; Figure 3) between the transducer and transmitter. The background section of the '272 patent in columns 1 and 2 discloses that the transducer and transmitter are to be used in a cleaning tank having a liquid supply to produce a meniscus of fluid between a semiconductor wafer and the transmitter. Because of the construction of the device, there are necessarily gaps and barriers to transmission which attenuate the energy transmitted.

The '272 patent differs from claims 1-20 in that it discloses that the configuration of the rod is to be adapted, for example, with the grooves shown in Figures 5 and 6 of the '272 patent. However, further to the comments made above with respect to the double patenting rejection, because of the continuous wave nature of the energy being transmitted through the transmitter, one of ordinary skill in the art would have understood that a modification made to the profile of any component along the transmission path from the transducer to the transmitter would have an effect on the intensity and direction of the energy transmitted from the transmitter to the substrate. Moreover, one of ordinary skill in the art would have had a reasonable expectation that a large modification made to a larger component (e.g., the heat transfer element or

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coupling screen) along a short length of the transmission path would have the same or similar effect as a modification made to a smaller component (e.g., the transmitter itself) along a relatively longer length. One of ordinary skill in the art would have been motivated to modify the heat transfer element or a coupling element to include the grooves disclosed in the '272 patent in (and, more generally, to adapt the coupling of the transducer and transmitter to include the features shown in the '272 patent) in order to avoid the difficulty of fabricating those features on the transmitter, which is smaller.

Accordingly, the '272 patent renders claims 1-20 obvious.

Examiner's Note

10. Instead of relying so heavily on functional language to distinguish the invention from the prior art, Applicant may wish to consider entering one or more claims that recite a radially asymmetric coupling element between the transducer and transmitter. While such a claim would require further search and consideration, if properly limited with additional structure, and if found to be allowable, it would provide Applicant with an additional, and perhaps meaningful, measure of patent protection. The Examiner notes that applicable prior art coupling elements encountered in searching the claims thus far have been radially symmetric in construction.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Stoker, U.S. Patent No. 4,615,984 is cited for its disclosure of a converter (i.e., a coupler) between a transducer and an ultrasonic horn.

The disclosure of a contoured or grooved probe tip in Applicant-cited WO 90/14170 is noted.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew McAleavey whose telephone number is 571-272-0542. The examiner can normally be reached on Monday through Friday, 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on 571-272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MICHAEL BARR
SUPERVISORY PATENT EXAMINER

A handwritten signature in black ink, appearing to read 'Michael Barr', with a stylized flourish at the end.